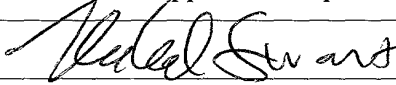


J014 R-c'd PCT/PTO 2 4 AUG 2001

FORM PTO-1390 (REV 10-94)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		DOCKET #: 4925-137PUS	
<b>TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371</b>					
				U.S. APPLICATION NO. (If known, see 37 CFR 1.5) <b>09/914307</b>	
INTERNATIONAL APPLICATION NO. <b>PCT/FI00/00187</b>		INTERNATIONAL FILING DATE <b>10 March 2000</b>		PRIORITY DATE CLAIMED <b>10 March 1999</b>	
TITLE OF INVENTION <b>A Cell Selection Method</b>					
APPLICANT(S) FOR DO/EO/US <b>Jukka VIALEN; Fabio LONGONI; Zhi-Chun HONKASALO</b>					
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:					
<ol style="list-style-type: none"> <li>1. <input checked="" type="checkbox"/> This is a <b>FIRST</b> submission of items concerning a filing under 35 U.S.C. 371.</li> <li><input type="checkbox"/> This is a <b>SECOND</b> or <b>SUBSEQUENT</b> submission of items concerning a filing under 35 U.S.C. 371</li> <li><input checked="" type="checkbox"/> This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).</li> <li><input checked="" type="checkbox"/> A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.</li> <li><input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2))             <ol style="list-style-type: none"> <li>a. <input checked="" type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau).</li> <li>b. <input checked="" type="checkbox"/> has been transmitted by the International Bureau.</li> <li>c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US)</li> </ol> </li> <li><input type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2)).</li> <li><input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))             <ol style="list-style-type: none"> <li>a. <input checked="" type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau). (See Reply to Written Opinion)</li> <li>b. <input type="checkbox"/> have been transmitted by the International Bureau.</li> <li>c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</li> <li>d. <input type="checkbox"/> have not been made and will not be made.</li> </ol> </li> <li>8. <input type="checkbox"/> A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).</li> <li>9. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)). <b>Unexecuted</b></li> <li>10. <input type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).</li> </ol> <p><b>Items 11. to 16. Below concern other document(s) or information included:</b></p> <ol style="list-style-type: none"> <li>11. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.</li> <li>12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.</li> <li>13. <input checked="" type="checkbox"/> A <b>FIRST</b> preliminary amendment. <input type="checkbox"/> A <b>SECOND</b> or <b>SUBSEQUENT</b> preliminary amendment.</li> <li>14. <input type="checkbox"/> A substitute specification.</li> <li>15. <input type="checkbox"/> A change of power of attorney and/or address letter.</li> <li><input checked="" type="checkbox"/> Other items or information (<i>specify</i>): PCT Publication Sheet, Int'l Preliminary Examination Report, Written Opinion, Reply to Written Opinion (attaching page of amended specification and amended claims), Int'l Search Report, PCT Request, Notice Informing the Applicant of the Communication of the International Application to the Designated Offices, PCT Demand</li> </ol>					

U.S. APPLICATION NO. (if known, see 37 CFR 1.51) <b>09/914307</b>		INTERNATIONAL APPLICATION NO. <b>PCT/FI00/00187</b>		ATTORNEY'S DOCKET NUMBER <b>4925-137PUS</b>	
17.[x]The following fees are submitted:					
<b>Basic National Fee (37 CFR 1.492(a)(1)-(5)):</b> Search Report has been prepared by the EPO or JPO .....\$860.00 International preliminary examination fee paid to USPTO (37 CFR 1.482).....\$690.00 No international preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2)).....\$710.00 Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO .....\$1000.00 International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4) .....\$100.00					
ENTER APPROPRIATE BASIC FEE AMOUNT =				\$	860
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$	
Claims	Number Filed	Number Extra	Rate		
Total Claims	5 - 20 =		x \$18.00	\$	
Independent Claims	1 - 3 =		x \$80.00	\$	
Multiple dependent claim(s) (if applicable)			+ \$270.00	\$	
TOTAL OF ABOVE CALCULATIONS =				\$	860
Reduction of 1/2 for filing by small entity, if applicable.				\$	
SUBTOTAL =				\$	860
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				\$	
TOTAL NATIONAL FEE =				\$	860
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by the appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property				\$	
TOTAL FEES ENCLOSED				\$	860
Amount to be refunded:				\$	
charged:				\$	
a. [x]One check in the amount of \$ 860 to cover the above fees is/are enclosed. b. <input type="checkbox"/> Please charge my Deposit Account No. 03-2412 in the amount of \$_____ to cover the above fees. A duplicate copy of this sheet is enclosed. c. [x]The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 03-2412. A duplicate copy of this sheet is enclosed.					
<b>NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.</b>					
SEND ALL CORRESPONDENCE TO: <u>Michael C. Stuart</u> Cohen, Pontani, Lieberman & Pavane 551 Fifth Avenue, Suite 1210 New York, New York 10176			 <u>Michael C. Stuart</u> Registration Number: 35,698 Tel: (212) 687-2770		

**A cell selection method****TECHNICAL FIELD OF THE INVENTION**

5 The invention is directed to a method for cell selection in a cellular telecommunication system. More precisely the invention is directed to a method described in the preamble of the first independent method claim.

**BACKGROUND OF THE INVENTION**

Some of the abbreviations used in this application are as follows:

CCCH	Common Control Channel
10 DCCH	Dedicated Control Channel
DRNC	Drift Radio Network Controller
DTCH	Dedicated Traffic Channel
FACH	Forward Link Access Channel
IMSI	International Mobile Subscriber Identity
15 PCCH	Paging Control Channel
PCH	Paging Channel
PLMN	Public Land Mobile Network
P-TMSI	Packet Temporary Mobile Subscriber Identity
RACH	Random Access Channel
20 RNC	Radio Network Controller
RNTI	Radio Network Temporary Identity
RRC	Radio Resource Control
TMSI	Temporary Mobile Subscriber Identity
UE	User Equipment
25 UMTS	Universal Mobile Telecommunication System
UTRAN	UMTS Terrestrial Radio Access Network

For clarification of common terms used in this document, an overview of certain cellular telecommunication system configurations is presented in the following.

30 Proposals for third-generation systems include UMTS (Universal Mobile Telecommunications System) and FPLMTS/IMT-2000 (Future Public Land Mobile Telecommunications System / International Mobile Telecommunications at 2000 MHz). In these plans cells are categorised according to their size and characteristics

into pico-, nano-, micro- and macrocells, and an example of the service level is the bit rate. The bit rate is the highest in picocells and the lowest in macrocells. The cells may overlap partially or completely and there may be different terminals so that not all terminals necessarily are able to utilise all the service levels offered by the cells.

Figure 1 shows an exemplary block diagram of a possible structure of a third generation cellular network. Such networks typically comprise a core network 50 connected to one or more radio access networks 40 (RAN). Such radio access networks are often referred to as UTRAN networks (UMTS Terrestrial Radio Access Network). The radio access networks typically comprise at least a plurality of base stations 20a,20b,20c (BS) for realizing the radio connections to mobile stations 10a,10b, and at least one radio network controller 30 (RNC) for controlling the base stations. The radio network controllers are connected to a mobile switching center (MSC) 60 in the core network.

A third generation UE can be in many different states in relation to the network. If no connections are present, the UE is in the idle mode. When at least one signalling connection exists, the UE is in connected mode. The connected mode has two main states: an URA connected state and a cell connected state. In the URA connected state, the position of the UE is known on URA (UMTS Registration Area) level. An URA consists of a plurality of cells within a certain geographical area. In the cell connected state, the position of the UE is known in the cell level. All data transmission is effected in the cell connected state.

From the viewpoint of radio resource allocation, a UE in connected mode i.e. when RRC connections exist has two main states: dedicated channel state (DCH) and common channel state (CCH).

In dedicated channel state the UE uses dedicated radio interface resources for the connection with UTRAN. There is one dedicated radio link for each cell included in the Active Set, i.e. the set of cells used by the UE. The Active Set may contain one or more cells.

In common channel state the UE shares a common channel with other users. The common channel state the UE may be in RACH/FACH or RACH/PCH substates. In RACH/FACH state the position of the UE is known at cell level, i.e. the UE is always connected to one cell. In RACH/PCH state the position of the UE is known either at cell level or at URA level.

DCH to CCH state transition may occur for example as a result of the following RRC procedures:

- Transport channel reconfiguration, in which a transport channel is changed from a dedicated to a common channel, for example for a NRT bearer.
- 5 - Radio access bearer (RAB) release, in which at least one bearer is released, and the last remaining one is a non-real time (NRT) bearer which is currently not active or is which is configured to use common channels.
- Physical channel reconfiguration, which procedure may assign, replace or release a set of physical channels used by an UE. A physical channel reconfiguration procedure may also change the used transport channel type and RRC state.
- 10 - Radio access bearer (RAB) reconfiguration, in which parameters for a radio access bearer or a signalling link are reconfigured to reflect a change in required QoS level. A RAB reconfiguration procedure may comprise for example changing of RLC parameters, changing of multiplexing priority for DTCH/DCCH, changing of DCH scheduling priority, changing of TFS for DCH, change of TFCS, assigning or releasing of physical channel(s) and changing of used transport channel types.
- 15

The signalling in the case of the four previous procedures is similar: they are started by the serving RNC which sends a XXX message to the UE, which replies with a XXX Complete message, in which XXX refers to the particular procedure in question.

20

In the transition from DCH to CCH - cell connected state, the cell that will be initially used in the CCH state needs to be selected and indicated. A known way of selecting and indicating the initial cell is the use of a cell update procedure started by the UE. In this method the UE selects the cell, and sends a cell update message using the RACH channel of the selected cell. The network replies by sending a cell update confirm message via the corresponding FACH channel. This solution causes too much signalling on the RACH/FACH channels. Further, the UE may not know all details which affect the optimality of the cell selection. For example, the network may for various reasons prefer that the UE selects a macro cell, or a cell that is controlled by the SRNC.

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3a

- 5 Patent publication US 5,707,096, for example, discusses mobile station initiated cell update procedures in cellular telecommunication networks, where a mobile station has various common channel modes. It discloses a system and method for maintaining control channel mode status information for a mobile station. Following reselection of a new cell by the mobile station, or selection of a new analog or digital operating mode, the system described in said publication notifies a mobile switching center of the mobile station's identity and its current control channel mode.

Another known solution is that the XXX complete message is sent by the UE on the RACH channel of the selected cell after the DCH is released. In this case the XXX Complete message should be acknowledged by the network to ensure that the message has gone through, which results in a similar signalling load as the cell update method.

## SUMMARY OF THE INVENTION

An object of the invention is to realize a method, which reduces the amount of signalling associated with DCH to CCH state change. A further object of the invention is to realize a method, which allows reduction of the time needed for a DCH to CCH state change.

The objects are reached by arranging the network to suggest a cell to be used by the UE in the CCH state, and by indicating the cell as a parameter to the RRC command, which initiates the DCH to CCH state change.

The method according to the invention is characterized by that, which is specified in the characterizing part of the independent method claim. The dependent claims describe further advantageous embodiments of the invention.

According to the invention, cell identification information is attached as a parameter to a RRC message initiating the state change of the mobile station to the cell-connected state. Advantageously, the network selects a cell to be suggested as the cell for use by the mobile station in the cell-connected state, and the network indicates said cell by attaching cell identification information as a parameter to said RRC message. Consequently, the mobile station may make the final selection of the cell, and indicate the selected cell to the network by attaching cell identification information as a parameter to a second RRC message, such as the response message to the RRC message initiating the state change.

## BRIEF DESCRIPTION OF THE DRAWINGS

The invention is described in more detail in the following with reference to the accompanying drawings, of which

Figure 1 illustrates a network structure according to prior art,

Figure 2 illustrates signalling according to an advantageous embodiment of the invention,

Figure 3 illustrates signalling according to an advantageous embodiment of the invention, and

Figure 4 illustrates signalling according to an advantageous embodiment of the invention.

5 Same reference numerals are used for similar entities in the figures.

## DETAILED DESCRIPTION

Figure 2 illustrates signalling according to an advantageous embodiment of the invention. Figure 2 shows a UE 10 and UTRAN 40, and illustrates signalling between them. In the first step 110, UTRAN sends a command XXX\_COMMAND to initiate a RRC procedure, in which XXX refers to the particular procedure in question. After receiving the command, the UE performs 120 any necessary actions according to the requested procedure. In this embodiment, UE next checks 130, if only CCH connections are left. In this example, only CCH connections are found to be left after the completed RRC procedure. Consequently, the UE selects 140 a cell to be indicated as the location cell of the UE in the CCH cell connected state, and sends 150 a XXX\_COMPLETE message back to UTRAN to indicate that the requested RRC procedure is complete, attaching cell identification information CELL\_ID as a parameter to the XXX\_COMPLETE message. Preferably, the UE sends the XXX\_COMPLETE message on the DCH channel before releasing the DCH channel.

The RRC procedure referred to in the previous paragraph and in the rest of this specification with the XXX\_COMMAND and XXX\_COMPLETE messages may be any RRC procedure, which may result in a transition of the UE from DCH to CCH state. Examples of procedures are transport channel reconfiguration, radio access bearer (RAB) release, physical channel reconfiguration, and radio access bearer (RAB) reconfiguration, which were described in the previous description of prior art.

Figure 3 illustrates signalling according to a further advantageous embodiment of the invention. In this embodiment, the network selects the cell used in the CCH state. Before initiating the necessary RRC procedure, the network checks 102 if only CCH connections will be left after the procedure. If that is the case, as it is in this example, the network selects 104 the cell to be indicated as the location of the UE in the CCH state. Next, the network initiates the desired RRC procedure by sending 110 a XXX\_COMMAND to the UE, attaching identification information of



the selected cell CELL\_ID as a parameter to the XXX\_COMMAND message. After receiving the XXX\_COMMAND message, the UE performs 120 the requested RRC procedure, and replies by sending 150 a XXX\_COMPLETE message back to the network. The UE may send the CELL\_ID information as a parameter of the XXX\_COMPLETE message back to the network.

Figure 4 illustrates signalling according to an advantageous embodiment of the invention. In this embodiment, the network suggests to the UE the cell used in the CCH state. Before initiating the necessary RRC procedure, the network checks 102 if only CCH connections will be left after the procedure. If that is the case, as it is in this example, the network selects 104 the cell to be suggested to the UE as the location of the UE in the CCH state. Next, the network initiates the desired RRC procedure by sending 110 a XXX\_COMMAND to the UE, attaching identification information of the suggested cell CELL\_ID as a parameter to the XXX\_COMMAND message. After receiving the XXX\_COMMAND message, the UE performs 120 the requested RRC procedure.

In this embodiment, the UE may perform checking 130, if only CCH connections still exist after the RRC procedure. However, the inclusion of a CELL\_ID parameter to the XXX\_COMMAND may in various embodiments of the invention be taken as an indication, that only CCH connections are left, in which case a cell needs to be selected.

Next, the UE selects the cell to be used as the location of the UE in the CCH state. The UE may take into account the suggestion of the network, if it so chooses. However, the UE may have preferences, for example set by the user of the UE, about which cells are to be preferred. Based on for example such information, the UE may select another cell than the one suggested by the network. Thus the UE can select the cell from a set of cells comprising the cell indicated by the network and any other cells otherwise known by the UE, for example such as those belonging to the active set or those cells whose identification signals the UE can currently receive. After this, the UE sends 150 a XXX\_COMPLETE message back to the network. The UE sends identification information CELL\_ID of the selected cell to the network as a parameter of the XXX\_COMPLETE message.

In the previous examples, the network element originating the XXX\_COMMAND messages and receiving the XXX\_COMPLETE messages, i.e. the network element comprising the RRC protocol entities in the UTRAN, is typically a radio network controller (RNC).

In a further advantageous embodiment of the invention, a cell of the active set i.e. of those cells in use by the UE is appointed as a default cell. In such an embodiment, the cell does not need to be identified in the XXX\_COMMAND and XXX\_COMPLETE message, since a default cell is already known. The communication of the default cell is in such a case effected with messaging associated with updating of the active set. This feature can in various embodiments of the invention be used in combination with the previously described features. For example, in one embodiment of the invention the network always suggests the default cell to the UE, but the UE makes the final decision by itself.

- 10 The invention reduces the amount of signalling between the UE and the network, since the selection of cell does not incur more messaging, as the known solutions do. Further, the invention reduces amount of processing in the UE and in the network, since amount of messaging is decreased. This is very important regarding the UE, since any messaging over the radio interface consumes energy, which is a critical resource in typical battery-operated mobile handsets. The invention also reduces delay in changing from DCH to CCH state, since the time spent in messaging is reduced along with the messaging.

- 15 The invention can be advantageously applied in third generation cellular systems, such as the UMTS (Universal Mobile Telecommunication System) or the IMT2000 cellular system.

- 20 In the previous embodiments, in which the network suggests or selects a cell to be used in the CCH state, the network may base the selection of the cell for example on information specific to the network, such as to select a cell under control of the serving RNC. The network may for example also select a macro cell i.e. a cell with a relatively large area to avoid the situation, in which the UE selects a microcell i.e. a cell with a very small area, in which case the network would most probably have to perform a handover for the connection or the connections of the UE very soon.

- 25 If the cell selected to be used in the CCH state is already in the active set i.e. the set of cells used by the UE when the cell selection is performed, the selected cell can in various embodiments of the invention be indicated by radio link identification information LINK\_ID instead of cell identification information CELL\_ID. In such a case, the network can indicate a cell to the UE by attaching the radio link identification information LINK\_ID to the XXX\_COMMAND message. Similarly, the UE can indicate a cell to the network by attaching the radio link identification information LINK\_ID to the XXX\_COMPLETE message.
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- 35

5 The present invention has several advantages. For example, according to the inventive method, the UE does not need to perform signalling when entering a new cell as a result of a DCH to CCH state change. Since according to the invention, the cell to be selected is identified before the state change, no signalling is needed in the new cell for identification of the selected cell. This advantage is obtained both in embodiments, in which the UE performs the final selection, and in embodiments in which the network performs the final selection. Therefore, the amount of signalling is lower than in the solutions according to the prior art.

10 The name of a given functional entity, such as the radio network controller, is often different in the context of different cellular telecommunication systems. For example, in the GSM system the functional entity corresponding to a radio network controller (RNC) is the base station controller (BSC). Therefore, the term radio network controller is intended to cover all corresponding functional entities regardless of the term used for the entity in the particular cellular telecommunication  
15 system. Further, the various command names such as the XXX\_COMMAND command name are intended to be examples only, and the invention is not limited to using the command names recited in this specification.

The term mobile station is used in the claims to denote a UE or a corresponding mobile communication means.

20 In view of the foregoing description it will be evident to a person skilled in the art that various modifications may be made within the scope of the invention. While a preferred embodiment of the invention has been described in detail, it should be apparent that many modifications and variations thereto are possible, all of which fall within the true spirit and scope of the invention as defined in the appended  
25 claims.

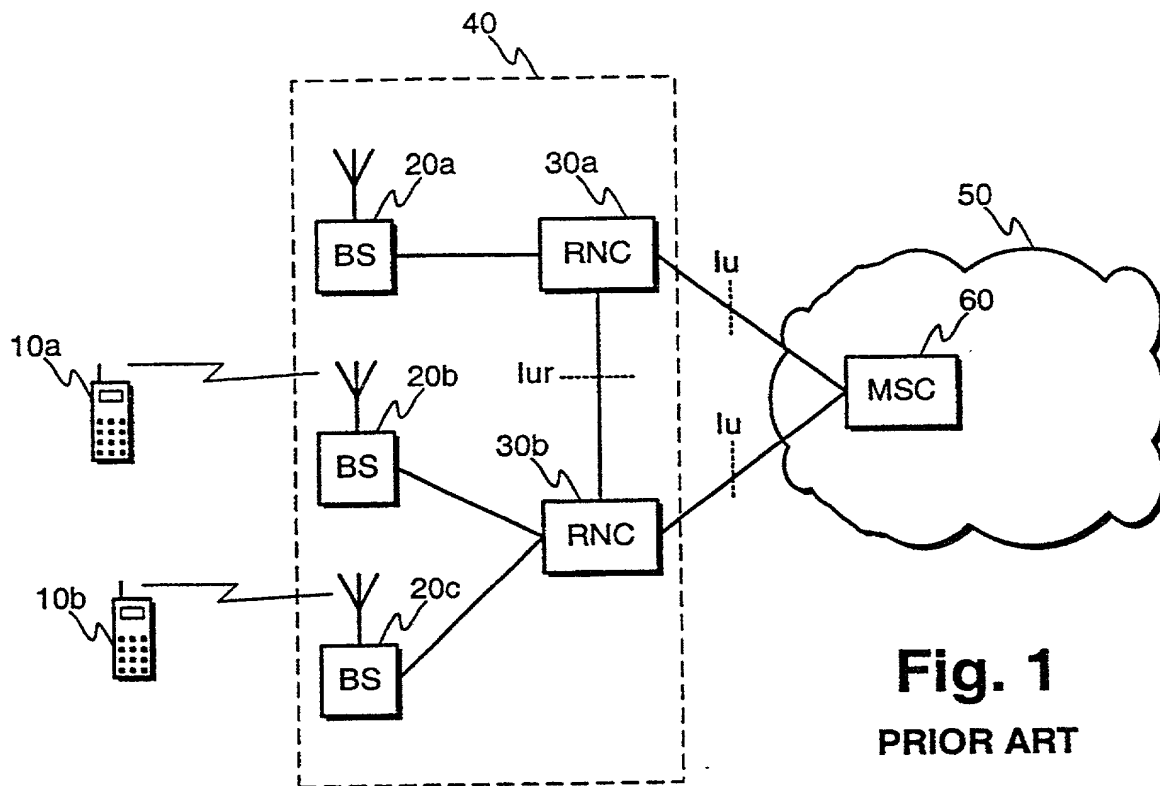
## Claims

1. A method for use in a cellular telecommunications network for selection of a cell for use by a mobile station in a cell-connected state, said cellular telecommunications network comprising a plurality of radio access networks having  
5 cells, said cells being grouped into registrations areas, and said mobile station having a plurality of states, said states comprising an idle-mode state; a registration-area-connected state, the location of a mobile station in which state is known to the cellular telecommunications network on a registration area level; and a cell-  
10 connected state, the location of a mobile station in which state is known to the cellular telecommunications network on a cell level, characterised in that cell identification information is attached as a parameter to a message initiating the change of the mobile station to the cell-connected state, and in that the method comprises steps, in which
- the network selects (104, 105) a cell to be suggested as the cell for use by the  
15 mobile station in the cell-connected state, and
  - the network indicates (110) said cell by attaching cell identification information as a parameter to said message.
2. A method according to claim 1, characterized in that said message is an RRC message.
- 20 3. A method according to claim 1, characterised in that the method comprises steps, in which
- the mobile station selects (140) a cell for use in the cell-connected state, and
  - the mobile station indicates (150) the selected cell by attaching cell identification information as a parameter to a second message.
- 25 4. A method according to claim 3, characterised in that in the step, in which the mobile station selects a cell, the selection is made from a set of cells comprising cells known by the mobile station and said cell indicated by the network.
5. A method according to claim 1, characterised in that the method comprises a  
30 step, in which the network selects a cell of the active set of the mobile station to be a default cell to be suggested to the mobile station.

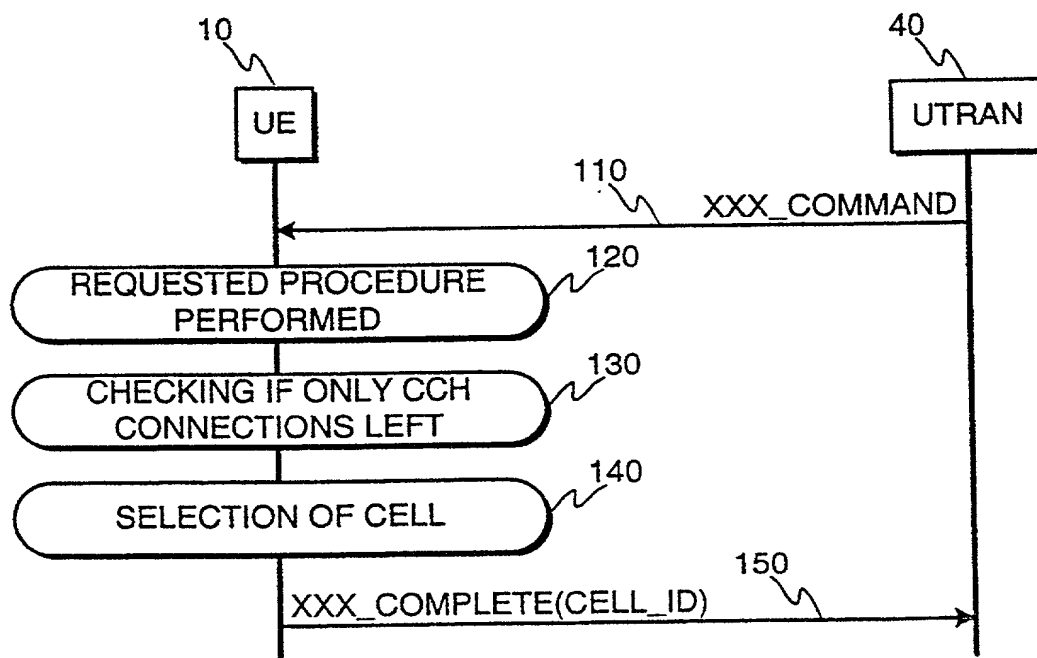
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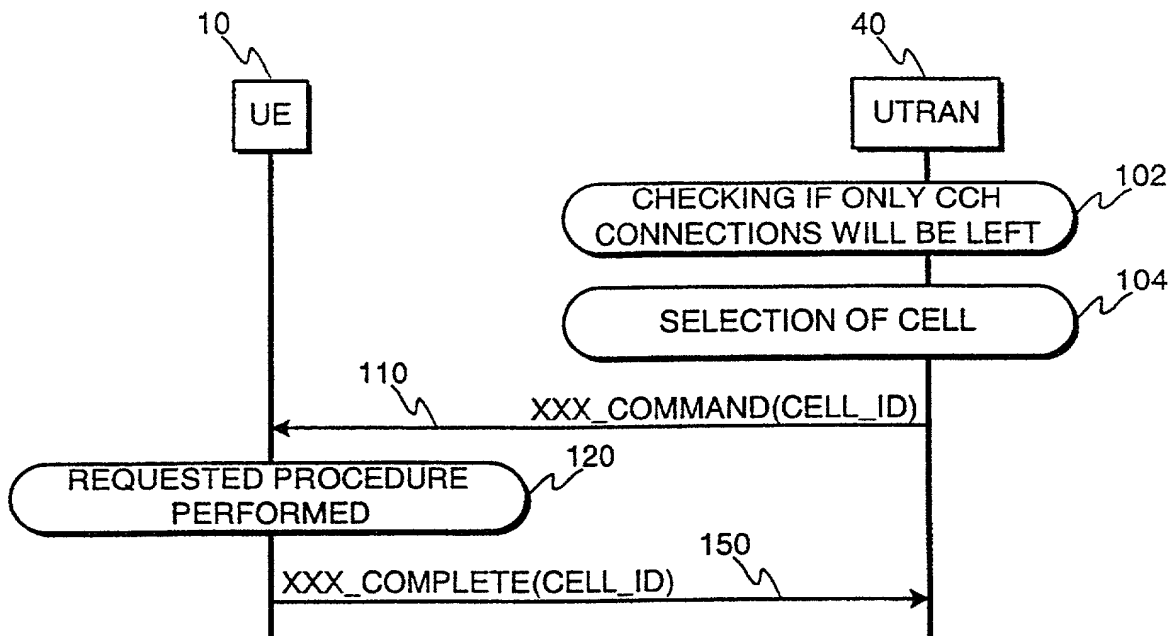
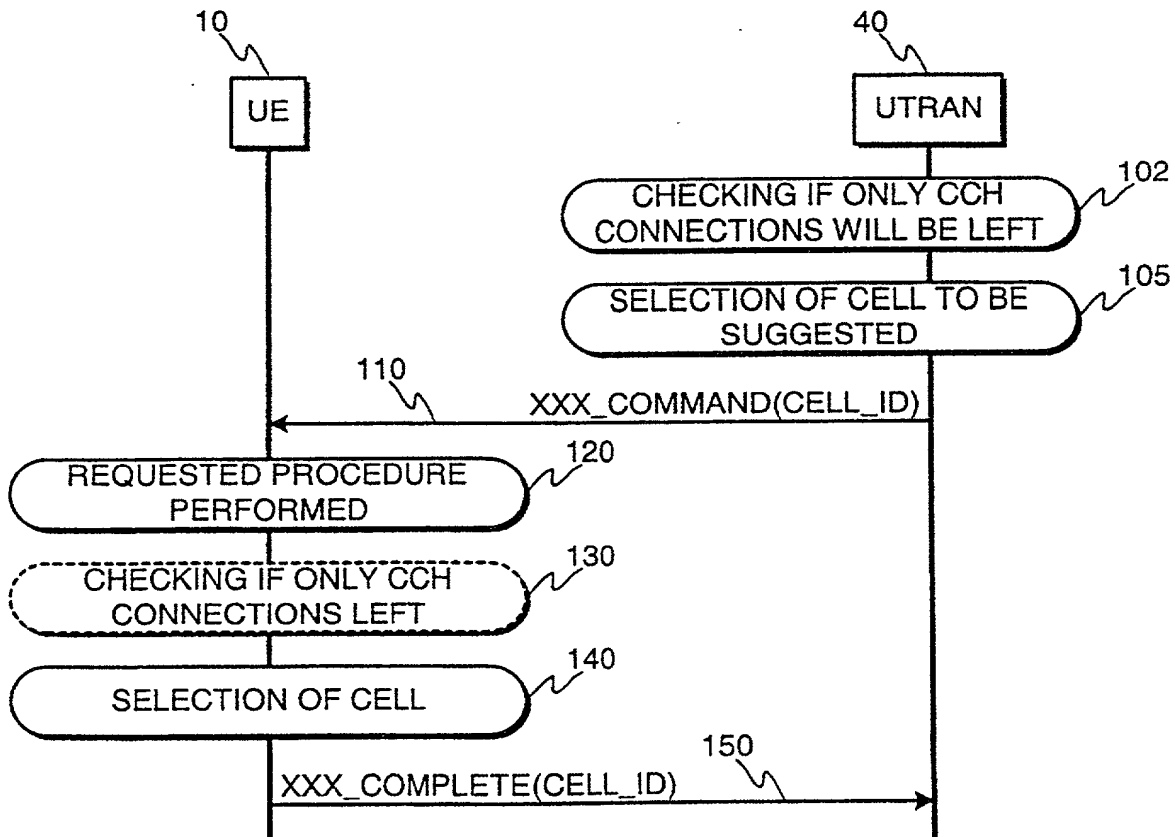
**Fig. 1**  
PRIOR ART



**Fig. 2**

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**Fig. 3****Fig. 4**

**COMBINED DECLARATION FOR PATENT APPLICATION AND POWER OF ATTORNEY**  
Includes Reference to PCT International Applications

Attorney's Docket  
No. **4925-137PUS**

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**A CELL SELECTION METHOD**

the specification of which (check only one item below)

☐ is attached hereto

☐ was filed as United States application

Serial No. \_

on \_

and was amended

on \_ (if applicable).

☐ was filed as PCT international application

Number PCT/FI00/00187

on 10 March 2000

and was amended under PCT Article 19

on \_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of the application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

**PRIOR FOREIGN/PCT APPLICATIONS AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. 119:**

Country (if PCT, indicate "PCT")	Application Number	Date of Filing (day, month, year)	Priority Claimed Under 35 U.S.C. 119	
Finland	990526	10 March 1999	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
PCT	PCT/FI00/00187	10 March 2000	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
			<input type="checkbox"/> YES	<input type="checkbox"/> NO
			<input type="checkbox"/> YES	<input type="checkbox"/> NO
			<input type="checkbox"/> YES	<input type="checkbox"/> NO
			<input type="checkbox"/> YES	<input type="checkbox"/> NO
			<input type="checkbox"/> YES	<input type="checkbox"/> NO



I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application:

**PRIOR U.S. APPLICATIONS OR PCT INTERNATIONAL APPLICATIONS DESIGNATING THE U.S. FOR BENEFIT UNDER 35 U.S.C. 120:**

U.S. APPLICATIONS			STATUS (check one)		
U S APPLICATION NUMBER	U S FILING DATE		PATENTED	PENDING	ABANDONED
PCT APPLICATIONS DESIGNATING THE U.S.					
PCT APPLICATION NO	PCT FILING DATE	U S SERIAL NUMBERS ASSIGNED (if any)			
PCT/FI00/00187	10 March 2000			X	

**POWER OF ATTORNEY:** As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith (*List name and registration number*)

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Combined Declaration for Patent Application and Power of Attorney (Continued) (Includes Reference to PCT International Applications)				Attorney's Docket No. 4925-137PUS
2 0 3	FULL NAME OF INVENTOR	FAMILY NAME <u>HONKASALO</u>	FIRST GIVEN NAME <u>Zhi-Chun</u>	SECOND GIVEN NAME
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<p>I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.</p>				
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DATE <u>10/26/2001</u>		DATE <u>17/10/01</u>		DATE <u>30/10/2001</u>

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